

Appln. No. 09/917,147  
Amdt. Dated July 28, 2003  
Reply to Office Action of May 1, 2003  
And Advisory Action of July 15, 2003  
Attorney Docket No.: MSU 4.1-553

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

-1- (Currently Amended)

1           A mesostructured crystalline hydrated alumina  
2           composition which is microporous and consists essentially  
3           of boehmite, pseudoboehmite and mixtures thereof  
4           ~~selected from the group consisting of gamma alumina,~~  
5           ~~boehmite, and mixtures thereof~~ and exhibiting at least  
6           one low angle x-ray diffraction line corresponding to a  
7           lattice spacing of at least 2.0 nm and multiple wide  
8           angle x-ray diffraction lines with CuK $\alpha$  radiation wherein  
9            $\lambda$  is 0.1541 nm corresponding to an ordered lattice  
10          comprised of oxygen atoms and hydroxide groups with  
11          aluminum in interstitial positions within the lattice,  
12          wherein the surface area is at least 200 m<sup>2</sup>/g; and wherein  
13          the pore volume is at least 0.40 cm<sup>3</sup>/g.

Claim 2 (Cancelled)

-3- (Currently Amended)

1                   A mesostructured crystalline hydrated alumina  
2     ~~and organic modifier~~ composite composition with mesopores  
3     containing an organic modifier in the mesopores of the  
4     alumina wherein the alumina composition consists  
5     essentially of boehmite, pseudoboehmite and mixtures  
6     thereof ~~is selected from the group consisting of gamma~~  
7     ~~alumina, boehmite, and mixtures thereof~~ and exhibits at  
8     least one low angle x-ray diffraction line corresponding  
9     to a lattice spacing of at least 2.0 nm and multiple wide  
10    angle x-ray diffraction lines corresponding to an ordered  
11    lattice comprised of oxygen atoms and hydroxide groups  
12    with aluminum in interstitial positions within the  
13    lattice.

-4- (Currently Amended)

1                   The composition of Claim 3 wherein the organic  
2     modifier ~~component~~ is a non-ionic surfactant.

-5- (Previously Amended)

1                   The composition of Claim 4 wherein the  
2     surfactant is selected from the group consisting of a  
3     polyethylene oxide block co-polymer, an alkylene amine;  
4     an alkylene polyamine, a polypropylene oxide amine, a  
5     polypropylene oxide polyamine and mixtures thereof.

-6-(Previously Amended)

1                   The composition of any one of Claims 3, 4 or 5  
2                   wherein the hydrated alumina component is boehmite.

-7-(Currently Amended)

1                   A mesostructured crystalline transition alumina  
2                   composition comprising gamma alumina ~~selected from the~~  
3                   ~~group consisting of gamma alumina, boehmite, and mixtures~~  
4                   ~~thereof~~ and:

5                   wherein the composition exhibits at least one  
6                   low angle x-ray diffraction line corresponding to a  
7                   lattice spacing of at least 2.0 nm and multiple wide  
8                   angle x-ray diffraction lines with CuK $\alpha$  radiation wherein  
9                   ~~where~~  $\lambda$  is 0.1541 nm corresponding to an ordered oxygen  
10                  atom lattice with aluminum in interstitial positions  
11                  within the lattice, wherein the surface area is at least  
12                  200 m<sup>2</sup>/g; and wherein the pore volume is at least 0.40  
13                  cm<sup>3</sup>/g.

-8-(Currently Amended)

1                   The mesostructured transition alumina of Claim  
2                   7 wherein the transition alumina consists essentially of  
3                   ~~comprises~~ gamma alumina.  
                  Claims 9-26 (Withdrawn)